

ABSTRACT

An example semiconductor device includes a substrate having a first surface and a second surface opposite each other, a logic block provided on the first surface of the substrate, a power delivery network including power lines connected to the logic block on the second surface of the substrate, and a connection structure penetrating the substrate and connecting an upper chip pad and a lower chip pad, wherein at least one of the upper chip pad or the lower chip pad may vertically overlap the logic block, and the connection structure may include a through conductive pattern that is horizontally spaced apart from the logic block and penetrates the substrate.

FIG. 5